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EXAMINER

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ART UNIT

PAPER NUMBER

2681

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/317,480

Applicant(s)

PEELE, JAMES CALVIN

Examiner

Eric D Lockett

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-30 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186) in view of Benveniste (US patent #5,809,423).
3. Regarding claim 1, Yu et al. discloses a method for allocating channels in a cellular communication system having a plurality of cells comprising: a. dividing the cell into a plurality of sectors (column 4 line 63 to column 5 line 6); b. subdividing channels allocated to the cell into frequency subgroups (column 4 line 63 to column 5 line 31); c. assigning the frequency subgroups to respective sectors in the cell (column 4 line 63 to column 5 line 31). However, Yu et al. does not disclose d. allocating channels within each sector to users in the corresponding sector; and e. when the number of channels allocated in a first sector of the cell reaches a predetermined threshold, reassigning an unused channel from a second sector in the cell to the first sector. Benveniste discloses d. allocating channels within each sector to users in the corresponding sector (base stations serving cells communicate to users via radio links (column 1 lines 16 to 20); and e. when the number of channels allocated in a first sector of the cell reaches a predetermined threshold, reassigning an unused channel from a second sector in the

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cell to the first sector (cell checks if there are any free allocated channels within the cell or sector) (column 3 lines 12 to 19, column 9 lines 31 to 44). It would have been obvious to combine the teachings of Yu et al. and Beveniste. Combining the teachings of Yu et al. and Beveniste would provide a method in which channels can be allocated in an efficient manner maximizing traffic capacity.

4. Regarding claim 2, Yu et al. in view of Benveniste disclose all of the limitations as set forth in claim 1. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector (column 9 lines 55 to 67).

5. Claims 3, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186) in view of Benveniste (US patent #5,809,423) in further view of Borst et al. (US patent #6,119,011).

6. Regarding claim 3, Yu et al. in view of Benveniste disclose all of the limitations as set forth in claim 1. Borst et al. discloses determining whether the unused channel in the second cell is in use in another co-channel cell (busy channel table) in the network before the unused channel is reassigned to the first sector (column 6 lines 57 to 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al. in view of Beveniste, with the teachings of Borst et al. Combining the teachings of Yu et al. in view of Beveniste, and the teachings of Borst et al. would determine whether a unused channel in any cell/sector which could be beneficial to minimize channel interference.

7. Regarding claim 6, Yu et al. discloses a method for allocating channels in a cellular communication system having a plurality of cells comprising: a. dividing the cell into a plurality of sectors (column 4 line 63 to column 5 line 6); b. subdividing channels allocated to the cell into frequency subgroups (column 4 line 63 to column 5 line 31); c. assigning the frequency subgroups to respective sectors in the cell (column 4 line 63 to column 5 line 31); (g) reassigning the unused channel from the second sector in the cell to the first sector in the cell if the unused channel is not currently in use in the co-channel cell (column 6 lines 57 to 65). However, Yu et al. does not disclose d. allocating channels within each sector to users in the corresponding sector; and e. when the number of channels allocated in a first sector of the cell reaches a predetermined threshold, determining whether unused channels are available in a second sector of the cell; and (f) if an unused channel is found in the second sector, determining whether the unused channel is currently in use in another co-channel cell in the network. Benveniste discloses d. allocating channels within each sector to users in the corresponding sector (base stations serving cells communicate to users via radio links (column 1 lines 16 to 20); and e. when the number of channels allocated in a first sector of the cell reaches a predetermined threshold, reassigning an unused channel from a second sector in the cell to the first sector (cell checks if there are any free allocated channels within the cell or sector) (column 3 lines 12 to 19, column 9 lines 31 to 44). However, Benveniste does not disclose (f) if an unused channel is found in the second sector, determining whether the unused channel is currently in use in another co-channel cell in the network. Borst et al. discloses (f) if an unused channel is found in the second sector, determining whether

the unused channel is currently in use in another co-channel cell in the network (column 6 lines 57 to 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al. in view of Benveniste, with the teachings of Borst et al. Combining the teachings of Yu et al. in view of Benveniste, and the teachings of Borst et al. would determine whether a unused channel in any cell/sector which could be beneficial to minimize channel interference.

8. Regarding claim 7, Yu et al., in view of Benveniste, in further view of Borst et al. disclose all of the limitations as set forth in claim 1. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector (column 9 lines 55 to 67).

9. Claims 4,5,8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186) in view of Benveniste (US patent #5,809,423) in view of Borst et al. (US patent #6,119,011) in further view of Przelomiec (US patent #5,960,351).

10. Regarding claim 4, Yu et al. in view of Benveniste in further view of Borst et al. disclose all of the limitations as set forth in claim 3. However, Yu et al. in view of Benveniste in further view of Borst et al. do not disclose further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al. in view of Beveniste, in further view of Borst et al. with the teachings of Przelomiec. Combining the teachings of Yu et al. in view of Beveniste, in further view of Borst et al. and the teachings of Przelomiec would indicate the last channel that should be used which would reduce potential interference problems.

11. Regarding claim 5, Yu et al. in view of Benveniste in view of Borst et al., in further view of Przelomiec disclose all of the limitations as set forth in claim 3. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell (column 9 lines 55 to 67).

12. Regarding claim 8, Yu et al., in view of Benveniste, in further view of Borst et al., disclose all of the limitations as set forth in claim 6. However, Yu et al. in view of Benveniste in further view of Borst et al. do not disclose further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al. in view of Beveniste, in further view of Borst et al. with the teachings of Przelomiec. Combining the teachings of Yu et al. in view of Beveniste, in further view of Borst et al. and the teachings of Przelomiec would indicate

the last channel that should be used which would reduce potential interference problems.

13. Regarding claim 9, Yu et al. in view of Benveniste in view of Borst et al., in further view of Przelomiec disclose all of the limitations as set forth in claim 8. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector (column 9 lines 55 to 67).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186), in view of Komara (US patent #6,161,024), in view of Reed (US patent #5,649,293), in further view of Lea (US patent #5,586,170).

15. Regarding claim 10, Yu et al. discloses a method for allocating channels in a cellular communication system having a plurality of cells comprising: a. dividing the cell into a plurality of sectors (column 4 line 63 to column 5 line 6); b. subdividing channels allocated to the cell into frequency subgroups (column 4 line 63 to column 5 line 31); However, Yu et al. does not disclose c. providing a transceiver array for each sector, wherein each said transceiver array includes a plurality of primary transceivers for channels allocated to the corresponding sector and one or more redundant transceivers for channels allocated to other sectors of the cell; d. placing the primary transceivers in each sector in active mode while said redundant transceivers are placed in a standby mode; e. allocating channels in each sector to users in that sector; f. determining the loading of each sector of the cell; g. when the loading in a first sector reaches a predetermined threshold, reassigning an unused channel from a second sector to the



first sector; h. placing the primary transceiver in the second cell corresponding to the reassigned channel in a standby mode; and i. placing the redundant transceiver in the first sector corresponding to the reassigned channel in an active mode. Komara discloses c. providing a transceiver array for each sector, wherein each said transceiver array includes a plurality of primary transceivers for channels allocated to the corresponding sector and one or more redundant transceivers (backup) for channels allocated to other sectors of the cell (column 1 lines 18 to 40); d. placing the primary transceivers in each sector in active mode while said redundant transceivers (backup) are placed in a standby mode (column 1 line 63 to column 2 line 5); (column 1 lines 18 to 40, column 1 line 63 to column 2 line 5). However, Komara does not disclose e. allocating channels in each sector to users in that sector; f. determining the loading of each sector of the cell; h. placing the primary transceiver in the second cell corresponding to the reassigned channel in a standby mode; and i. placing the redundant transceiver in the first sector corresponding to the reassigned channel in an active mode. Reed discloses e. allocating channels in each sector to users in that sector (column 1 lines 45 to 58); f. determining the loading of each sector of the cell (column 3 lines 24 to 61). However, Reed does not disclose h. placing the primary transceiver in the second cell corresponding to the reassigned channel in a standby mode; and i. placing the redundant transceiver in the first sector corresponding to the reassigned channel in an active mode. Lea discloses h. placing the primary transceiver in the second cell corresponding to the reassigned channel in a standby mode; and i. placing the redundant transceiver in the first sector corresponding to the reassigned channel in

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an active mode (column 3 lines 7 to 29). It would have been obvious to combine the teachings of Yu et al., Komara, Reed, and Lea. Combining these teachings would provide for an efficient way to manage the use of primary and redundant transceivers increasing the capacity of the system.

16. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186), in view of Komara (US patent #6,161,024), in view of Reed (US patent #5,649,293), in view of Lea (US patent #5,586,170), in further view of Benveniste (US patent #5,809,423).

17. Regarding claim 11, Yu et al., in view of Komara, in view of Reed, in further view of Lea disclose all of the limitations as set forth in claim 10. However, Yu et al., in view of Komara, in view of Reed, in further view of Lea does not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector (column 9 lines 55 to 67). It would have been obvious to combine the teachings of Komara, Reed, Lea, and Benveniste. Combining these teachings would provide for an efficient way to increase the capacity of the system.

18. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186), in view of Komara (US patent #6,161,024), in view of Reed (US patent #5,649,293), in view of Lea (US patent #5,586,170), in further view of Borst et al. (US patent #6,119,011).

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19. Regarding claim 12, Yu et al., in view of Komara, in view of Reed, in further view of Lea disclose all of the limitations as set forth in claim 10. However, Yu et al., in view of Komara, in view of Reed, in further view of Lea do not disclose further including determining means for determining whether the unused channel in the first sector is in use in another co-channel cell in the network before the unused channel is reassigned to the second sector. Borst et al. discloses (f) if an unused channel is found in the second sector, determining whether the unused channel is currently in use in another co-channel cell in the network (column 6 lines 57 to 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al., Komara, Reed, Lea, and Borst et al. Combining the teachings of Yu et al., Komara, Reed, Lea, and Borst et al. would determine whether a unused channel in any cell/sector, which could minimize channel interference.

20. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186), in view of Komara (US patent #6,161,024), in view of Reed (US patent #5,649,293), in view of Lea (US patent #5,586,170), in view of Borst et al. (US patent #6,119,011), in further view of Przelomiec (US patent #5,960,351).

21. Regarding claim 13, Yu et al., in view of Komara, in view of Reed, in view of Lea, in further view of Borst et al. of disclose all of the limitations as set forth in claim 12. However, Yu et al., in view of Komara, in view of Reed, in view of Lea, in further view of Borst et al. do not disclose discloses further including means for placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including means for placing the

reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Yu et al., Komara, Reed, Lea, Borst et al., and Przelomiec. Combining the teachings Yu et al., Komara, Reed, Lea, Borst et al. and Przelomiec would provide a means to indicate the last channel that should be used which would reduce potential interference problems.

22. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yu et al. (US patent #6,047,186), in view of Komara (US patent #6,161,024), in view of Reed (US patent #5,649,293), in view of Lea (US patent #5,586,170), in view of Borst et al. (US patent #6,119,011), in view of Przelomiec (US patent #5,960,351), in further view of Benveniste (US patent #5,809,423).

23. Regarding claim 14, Yu et al., in view of Komara, in view of Reed, in view of Lea, in view of Borst et al., in further view of Przelomiec disclose all of the limitations as set forth in claim 13. However, Yu et al., in view of Komara, in view of Reed, in view of Lea, in view of Borst et al., in further view of Przelomiec do not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell (column 9 lines 55 to 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Yu et al., Komara, Reed,

Lea, Borst et al., Przelomiec, and Benveniste. Combining the teachings of Yu et al., Komara, Reed, Lea, Borst et al., Przelomiec, and Benveniste would provide for an efficient way to manage the cell use and increasing the capacity of the system.

24. Claims 16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293).

25. Regarding claim 16, Komara discloses a. a plurality of antennas for broadcasting and receiving signals in respective sectors of the cell (column 1 lines 18 to 63); b. a transceiver array for each sector operatively connected to the antenna for that sector, each transceiver array including a plurality of primary transceivers for broadcasting and receiving signals on the channels that are allocated to the corresponding sector, and at least one redundant transceiver for transmitting and receiving signals on communication channels allocated to another sector in the cell (column 1 lines 18 to 40, column 1 line 63 to column 2 line 5). However, Komara does not disclose c. a base stations controller operatively connected to each transceiver array for monitoring channel utilization in each cell and for reassigning a channel from a first sector in a cell to a second sector in the same cell when the loading in the first sector reaches a predetermined threshold. Reed discloses c. a base stations controller operatively connected to each transceiver array for monitoring channel utilization in each cell and for reassigning a channel from a first sector in a cell to a second sector in the same cell when the loading in the first sector reaches a predetermined threshold (column 3 line 24 to column 4 line 54). It would have been obvious to combine the teachings of Komara and Reed. Combining

these teachings would provide for an efficient way to manage the cell use and increasing the capacity of the system.

26. Regarding claim 27, Komara discloses a base station (10) for a sectored cell in a cellular communication system comprising: a. a plurality of antennas for broadcasting and receiving signals in respective sectors of the cell; b. a transceiver array including a plurality of transceivers for broadcasting and receiving signals on the channels allocated to the cell (column 1 line 18 to column 2 line 5); c. a switching circuit connecting the transceiver array to the antenna in each sector of the cell for switching the transceiver inputs and outputs to respective antennas; a base station controller operatively connected to the transceiver array and switching circuit for (column 4 lines 14 to 19): However, Komara does not disclose i) monitoring channel utilization in each cell; ii) switching a channel from the first sector in a cell to a second sector in the same cell when the loading in the first sector reaches a predetermined threshold. Reed discloses i) monitoring channel utilization in each cell; ii) switching a channel from the first sector in a cell to a second sector in the same cell when the loading in the first sector reaches a predetermined threshold (column 3 lines 24 to 61). It would have been obvious to combine the teachings of Komara and Reed. Combining these teachings would provide for an efficient way to increase the capacity of the system.

27. Claim 17, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in further view of Lea (US patent #5,586,170).

28. Regarding claim 17, Komara in view of Reed disclose all of the limitations as set forth in claim 16. However, Lea discloses wherein the base station controller reassigns the channel by placing the primary transceiver in the first sector corresponding to the reassigned channel in a standby mode and placing a redundant transceiver in the second sector in an active mode (column 3 lines 7 to 29). It would have been obvious to combine the teachings of Komara and the teachings of Reed, with the teaching of Lea. Combining the teachings would provide a system in which a channel is reassigned in a sector placing the corresponding transceiver in standby or active mode which would increase the capacity of the system.

29. Regarding claim 21, Komara discloses a method for allocating channels in a sectored cell of a cellular communication system having a plurality of cells comprising:

- a. subdividing the channels allocated to the cell into frequency subgroups; b. assigning the frequency subgroups to respective sectors in the cell; c. providing a single transceiver array having a plurality of transceivers corresponding to the channels allocated to the cell; d. connecting the transceivers corresponding to each frequency subgroup to an antenna in the sector of the cell to which the subgroup has been assigned; e. allocating channels in each sector to users in that sector cell (column 1 line 18 to column 2 line 5); However, Komara does not disclose f. determining the loading of each sector of the cell; g. when the loading of the first sector reaches a predetermined threshold, reassigning an unused channel from a second sector to the first sector; h. disconnecting the transceiver corresponding to the reassigned channel from the second sector and connecting it to said first sector. Reed discloses f. determining the loading of

each sector of the cell; g. when the loading of the first sector reaches a predetermined threshold, reassigning an unused channel from a second sector to the first sector (column 3 lines 24 to 61). However, Reed does not disclose h. disconnecting the transceiver corresponding to the reassigned channel from the second sector and connecting it to said first sector. Lea discloses h. disconnecting the transceiver corresponding to the reassigned channel from the second sector and connecting it to said first sector (column 2 line 41 to column 3 line 29). It would have been obvious to combine the teachings of Komara, Reed, and Lea. Combining these teachings would provide for an efficient way to manage the use of primary and redundant transceivers increasing the capacity of the system.

30. Regarding claim 22, Komara, in view of Reed, in further view of Lea disclose all of the limitations as set forth in claim 21. Komara further discloses wherein the step of connecting and disconnecting the transceiver is accomplished by means of a switch (16) (column 4 lines 17 to 19).

31. Claims 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293), in further view of Borst et al. (US patent #6,119,011).

32. Regarding claim 18, Komara in view of Reed disclose all of the limitations as set forth in claim 16. However, Komara, in view of Reed do not disclose further including determining means for determining whether the unused channel in the first sector is in use in another co-channel cell in the network before the unused channel is reassigned to the second sector. Borst et al. discloses (f) if an unused channel is found in the



second sector, determining whether the unused channel is currently in use in another co-channel cell in the network (column 6 lines 57 to 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, and Borst et al. Combining the teachings of Komara, in view of Reed, and the teachings of Borst et al. would determine whether a unused channel in any cell/sector which could be beneficial to minimize channel interference.

33. Regarding claim 28, Komara in view of Reed disclose all of the limitations as set forth in claim 27. However, Komara, in view of Reed do not disclose further including determining means for determining whether the unused channel in the first sector is in use in another co-channel cell in the network before the unused channel is reassigned to the second sector. Borst et al. discloses (f) if an unused channel is found in the second sector, determining whether the unused channel is currently in use in another co-channel cell in the network (column 6 lines 57 to 65).

34. Claims 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293), in view of Borst et al., (US patent #6,119,011), in further view of Przelomiec (US patent #5,960,351).

35. Regarding claim 19, Komara, in view of Reed, in further view of Borst et al. disclose all of the limitations as set forth in claim 18. However, Komara, in view of Reed, in further view of Borst et al. do not disclose discloses further including means for placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including

means for placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, Borst et al., and Przelomiec. Combining the teachings Komara, Reed, Borst et al., and Przelomiec would provide a means to indicate the last channel that should be used which would reduce potential interference problems.

36. Regarding claim 29, Komara, in view of Reed, in further view of Borst et al. disclose all of the limitations as set forth in claim 28. However, Komara, in view of Reed, in further view of Lea do not disclose discloses further including means for placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including means for placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, and Przelomiec. Combining the teachings Komara, Reed, and Przelomiec would provide a means to indicate the last channel that should be used which would reduce potential interference problems.

37. Claims 20 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in further view of Benveniste (US patent #5,809,423).

38. Regarding claim 20, Komara in view of Reed disclose all of the limitations as set forth in claim 16. However, Komara in view of Reed do not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell (column 9 lines 55 to 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, and Benveniste. Combining these teachings would provide for an efficient way to manage the cell use and increasing the capacity of the system.

39. Regarding claim 30, Komara in view of Reed disclose all of the limitations as set forth in claim 27. However, Komara in view of Reed do not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell (column 9 lines 55 to 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, and Benveniste. Combining these teachings would provide for an efficient way to manage the cell use and increasing the capacity of the system.

40. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in view of Lea (US patent #5,586,170) in further view of Benveniste (US patent #5,809,423).

41. Regarding claim 23, Komara, in view of Reed, in further view of Lea disclose all of the limitations as set forth in claim 21. However, Komara, in view of Reed, in further view of Lea does not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the original sector (column 9 lines 55 to 67). It would have been obvious to combine the teachings of Komara, Reed, Lea, and Benveniste. Combining these teachings would provide for an efficient way to increase the capacity of the system.

42. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in view of Lea (US patent #5,586,170) in further view of Borst et al. (US patent #6,119,011).

43. Regarding claim 24, Komara, in view of Reed, in further view of Lea disclose all of the limitations as set forth in claim 21. However, Komara, in view of Reed, in further view of Lea does not disclose determining whether the unused channel in the second cell is in use in another co-channel cell (busy channel table) in the network before the unused channel is reassigned to the first sector. Borst et al. discloses determining whether the unused channel in the second cell is in use in another co-channel cell (busy

channel table) in the network before the unused channel is reassigned to the first sector (column 6 lines 57 to 65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, Lea, and Borst et al. Combining the teachings of Komara, Reed, Lea, and Borst et al. would determine whether a unused channel in any cell/sector which could be beneficial to minimize channel interference.

44. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in view of Lea (US patent #5,586,170) in view of Borst et al. (US patent #6,119,011) in further view of Przelomiec (US patent #5,960,351).

45. Regarding claim 25, Komara, in view of Reed, in view of Lea, in further view of Borst et al. disclose all of the limitations as set forth in claim 24. However, Komara, in view of Reed, in view of Lea, in further view of Borst et al. do not disclose further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used. Przelomiec discloses further including the step of placing the reassigned channel on a hold back list in the co-channel cell designating channels that should be among the last used (column 8 lines 12 to 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings Komara, Reed, Lea, Borst et al. and Przelomiec. Combining the teachings Komara, Reed, Lea, Borst et al. and Przelomiec would indicate the last channel that should be used which would reduce potential interference problems.

46. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Komara (US patent #6,161,024) in view of Reed (US patent #5,649,293) in view of Lea (US patent #5,586,170) in view of Borst et al. (US patent #6,119,011) in further view of Przelomiec (US patent #5,960,351) in further view of Benveniste (US patent #5,809,423).

47. Regarding claim 26, Komara, in view of Reed, in view of Lea, in view of Borst et al., in further view of Przelomiec disclose all of the limitations as set forth in claim 21. However, Komara, in view of Reed, in view of Lea, in view of Borst et al., in further view of Przelomiec do not disclose further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell. Benveniste further discloses further including the step of further reassigning the reassigned channel back to its original sector when the reassigned channel is demanded in the co-channel cell (column 9 lines 55 to 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Komara, Reed, Lea, Borst et al. Przelomiec and Benveniste. Combining the teachings of Komara, Reed, Lea, Borst et al. Przelomiec and Benveniste would provide for an efficient way to manage the cell use and increasing the capacity of the system.

***Allowable Subject Matter***

48. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

49. Regarding claim 15, the applicant discloses wherein said redundant transceiver is a frequency agile transceiver and further including the step of programming the redundant transceiver to operate on the reassigned channel. This subject matter in conjunction with the additional subject matter associated with it is neither taught nor suggested by the prior art.

***Conclusion***

50. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**PATENT NUMBER NAME**

5,247,699	Hartman – Cellular frequency reuse cell plan
5,111,534	Benner – Method for assigning telecommunications channels in a cellular telephone system
5,861,844	Gilmore et al. – Method and apparatus for providing redundant coverage within a cellular communication system.

51. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Eric Lockett whose telephone number is (703)

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308-4133. The examiner can normally be reached on Monday- Fridays from 9:00 AM to 5:30 PM.

52. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost, can be reached on (703) 305-4778. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-9508.

53.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 308-6306, (for formal communications intended for entry and informal or draft communications, please label "FORMAL," "PROPOSED," or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

*aw*  
Eric Lockett  
2/15/01

*Tracy Legree*  
TRACY LEGREE  
PRIMARY EXAMINER